City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name:	Vasa Creek Habitat Improvement Project
Proposal Address:	3616 164th Pl. SE and stream crossing under 164th Pl.
Proposal Description:	King County Wastewater proposes to make habitat improvements to Vasa Creek in the vicinity of where the stream crosses under 164th Place SE. Improvements include installation of a stream simulation channel, removal of invasive vegetation, and planting of native vegetation. The purpose of this project is to provide mitigation to offset unanticipated impacts that occurred to Vasa Creek in August of 2018 related to installation of a new sewer main as part of the Sunset and Heathfield Pump Station and Sewer Upgrade project under 15-130086-WG and 15-130087-LO.
File Number:	20-110821-LO
Applicant:	Christopher Dew, King County Wastewater
Decisions Included	Critical Areas Land Use Permit - (Process II. 20.30P)
Planner:	Reilly Pittman, Senior Environmental Planner
State Environmental Policy Act Threshold Determination:	Addendum to Determination of Non-Significance issued by King County on September 17, 2015 for the Sunset and Heathfield projects.
Director's Decision:	**Approval with Conditions**

By: *Heidi Bedwell, Planning Manager* for
Michael A. Brennan, Director
Development Services Department

Application Date:	June 26, 2020
Notice of Application Date:	July 30, 2020
Decision Publication Date:	August 27, 2020
Project Appeal Deadline:	September 10, 2020

For information on how to appeal a proposal, visit Development Services Center at City Hall or call (425) 452-6800. Appeal of the Critical Areas Land Use Permit decision must be made to the City of Bellevue City Clerk's Office by 5 p.m. on the date noted above as the appeal deadline.

CONTENTS

Documents Referenced in File

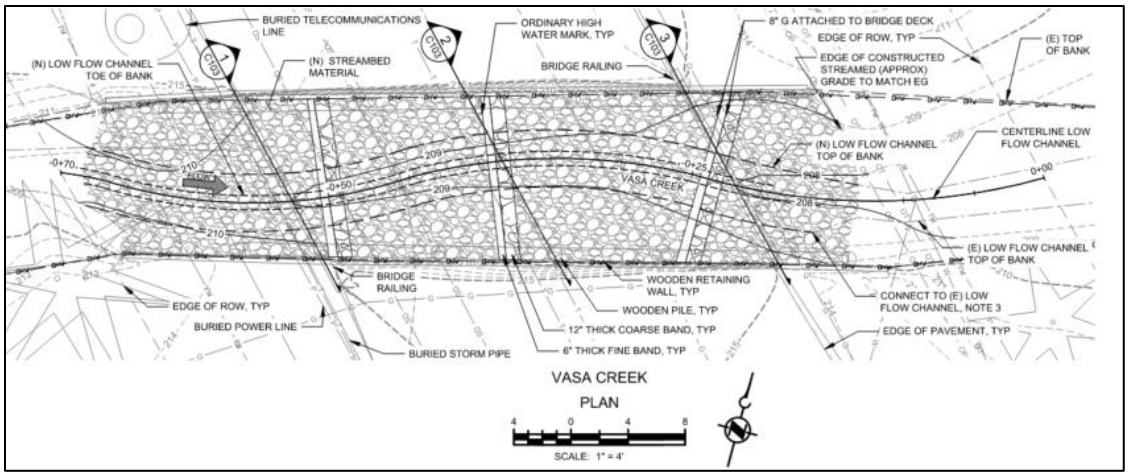
1. Project Plans
2. Critical Areas Narrative
3. Sunset and Heathfield Critical Areas Report
4. Stream Study for Base Flood Elevation
5. Public Comment and Responses
6. SEPA Checklist and SEPA Addendum to DNS

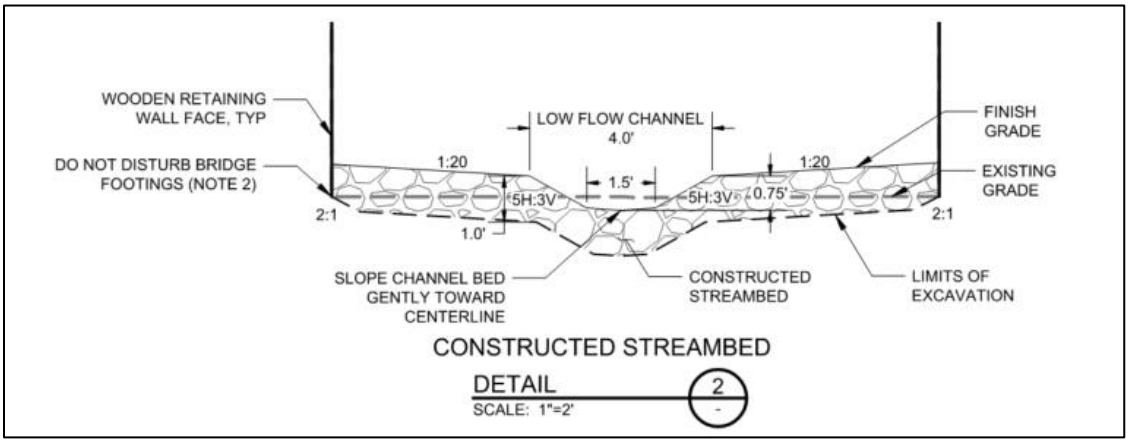
All other documents and materials found in project file

I. Proposal Description

King County Wastewater proposes habitat improvement of Vasa Creek as mitigation required by the Washington Department of Fish and Wildlife through modification of the Hydraulic Project Approval (HPA) issued for the Sunset/Heathfield project to upgrade King County regional sewer system. In 2018 the trenchless installation of replacement sewer main caused unexpected dewatering of Vasa Creek where it crosses 164th Pl SE. As a result, WDFW modified their approved HPA to require King County to implement compensatory mitigation for impacts to fish in Vasa Creek. King County proposes to create a low-flow channel improvement (stream simulation) to ensure a channel is maintained during times of low water flows. In addition, invasive vegetation will be removed and restored with native plants. This proposal is additional mitigation related to the installation and replacement of utility systems and facilities approved as part of the Sunset/Heathfield permits 15-130086-WG and 15-130087-LO. This proposal part of the construction of an allowed use in LUC 20.25H.055 and requires a Critical Areas Land Use Permit. This proposal largely relies upon the environmental reports, SEPA determination, and other information submitted in support of the Sunset/Heathfield permits and this staff report is an addendum to the staff report that was issued for that project. **See Figure 1 below for project plan and profiles for this stream improvement. See reference document 1 for project plans.**

Figure 1





II. Site Description, Zoning, Land Use and Critical Areas

A. Site Description

The site of this proposed mitigation is located in the Eastgate subarea of the City and is within and adjacent to the public right-of-way of 164th Place SE, where Vasa Creek crosses under the road in a box culvert. The approved sewer was south of the road and was installed by trenchless boring method to cross the stream. **See Figure 2 below for project location and Figure 3 for sewer for approved sewer construction.**

Figure 2

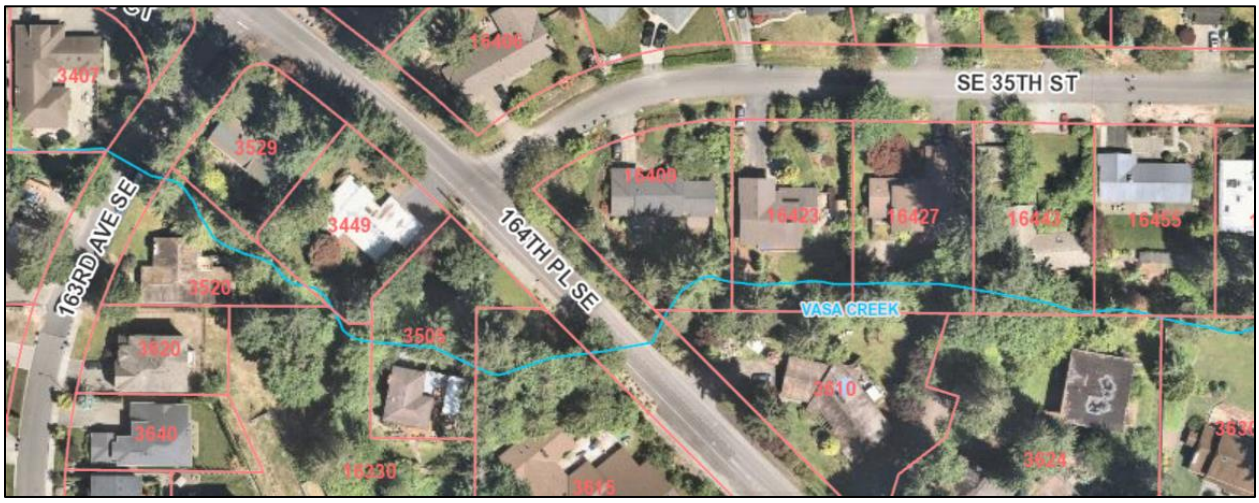
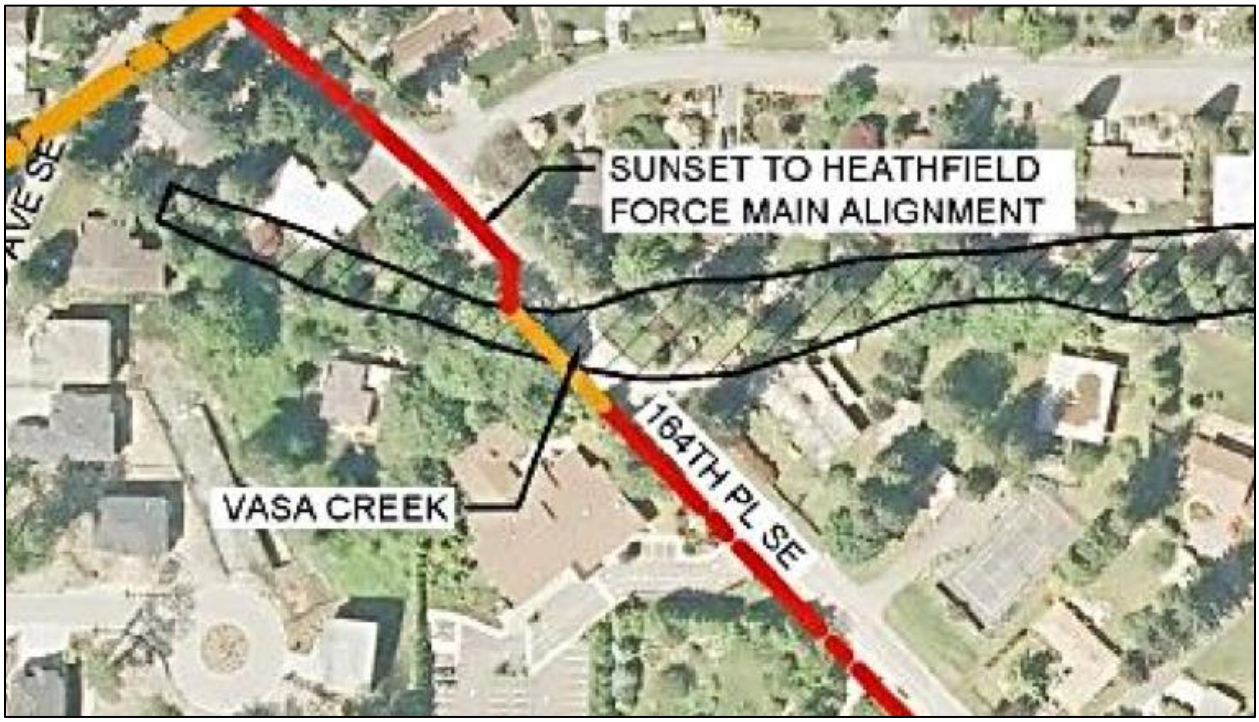


Figure 3



B. Zoning

The properties in this location are zoned R-5 which is a single-family zoning district with five dwelling units per acre expected.

C. Land Use Context

The location of this stream work is located adjacent to residential uses with comprehensive Plan Land Use designation of SF-H, Single-Family High Density.

D. Critical Areas – Functions and Values

The project area is located in Vasa Creek which is a Type-F stream. The Land Use Code protects critical areas and their important functions and values described below.

i. Streams and Riparian Areas

Most of the elements necessary for a healthy aquatic environment rely on processes sustained by dynamic interaction between the stream and the adjacent riparian area (Naiman et al., 1992). Riparian vegetation in floodplains and along stream banks provides a buffer to help mitigate the impacts of urbanization (Finkenbine et al., 2000 in Bolton and Shellberg, 2001). Riparian areas support healthy stream conditions.

Riparian vegetation, particularly forested riparian areas, affect water temperature by providing shade to reduce solar exposure and regulate high ambient air temperatures, slowing or preventing increases in water temperature (Brazier and Brown, 1973; Corbett and Lynch, 1985).

Upland and wetland riparian areas retain sediments, nutrients, pesticides, pathogens, and other pollutants that may be present in runoff, protecting water quality in streams (Ecology, 2001; City of Portland 2001). The roots of riparian plants also hold soil and prevent erosion and sedimentation that may affect spawning success or other behaviors, such as feeding.

Both upland and wetland riparian areas reduce the effects of flood flows. Riparian areas and wetlands reduce and desynchronize peak crests and flow rates of floods (Novitzki, 1979; Verry and Boelter, 1979 in Mitsch and Gosselink, 1993). Upland and wetland areas can infiltrate floodflows, which in turn, are released to the stream as baseflow

Stream riparian areas, or buffers, can be a significant factor in determining the quality of wildlife habitat. For example, buffers comprised of native vegetation with multi-canopy structure, snags, and down logs provide habitat for the greatest range of wildlife species (McMillan, 2000). Vegetated riparian areas also provide a source of large woody debris that helps create and maintain diverse in-stream habitat, as well as create woody debris jams that store sediments and moderate flood velocities.

Sparsely vegetated or vegetated buffers with non-native species may not perform the needed functions of stream buffers. In cases where the buffer is not well vegetated, it is necessary to either increase the buffer width or require that the standard buffer width be restored or revegetated (May 2003). Until the newly planted buffer is established the near term goals for buffer functions may not be attained.

Riparian areas often have shallow groundwater tables, as well as areas where groundwater and surface waters interact. Groundwater flows out of riparian wetlands, seeps, and springs to support stream baseflows. Surface water that flows into riparian areas during floods or as direct precipitation infiltrates into groundwater in riparian areas and is stored for later discharge to the stream (Ecology, 2001; City of Portland, 2001).

a. Site Conditions, Project Impacts and Proposed Mitigation

Vasa creek is a Type-F stream that drains approximately 1.9 square miles in the Somerset neighborhood of Bellevue. The creek generally flows in an easterly direction toward Lake Sammamish. The stream supports salmonid species including Coho, Sockeye, Kokanee, Steelhead, and Chinook. At the project site the stream flows under 164th Place SE through a bridge structure. The stream is approximately 6 feet wide and consists of a gravel/cobble substrate. The riparian corridor is forested but has a non-native and invasive species understory. The stream channel forms a defined V-Shape upstream and downstream of the bridge but within the bridge the channel is a flat plane with no defined channel or natural banks. This area is an identified fish passage barrier at times of low flows. This condition is proposed to be improved by the proposal to create a narrower low-flow channel similar to what exists upstream and downstream of the bridge. This will be achieved through building of flood plain benches against each bridge abutment. A temporary stream bypass will be installed to avoid impacts to fish and sediments during construction. Invasive vegetation along the stream banks be removed and replanted with native vegetation that will also be installed to restore areas of temporary disturbance from construction. Work is proposed to occur in September of 2020 and be completed by September 30th which is the last day of the in-water work window. These improvements are required to be incorporated into the approved maintenance and monitoring plan approved for the mitigation and restoration associated with the Sunset/Heathfield project approval. An update is required to be submitted under the clearing and grading permit for this work to include maintenance and monitoring of this planting and stream improvement which is required for five years. See section III of this report for discussion of performance standards related to this proposal. See Figure 4 below for a picture of the existing stream condition under the bridge. See reference document 2 for the critical area narrative, document 3 for Sunset and Heathfield Critical Area Report, and document 4 for stream study on base flood elevation. **See Conditions of Approval for maintenance and monitoring in Section IX of this report.**

Figure 4

III. Consistency with Land Use Code Requirements:

A. Zoning District Dimensional Requirements:

The proposed stream channel improvement does not alter the conformance of the Sunset/Heathfield project with zoning requirements. There is no element of this current proposal that is subject to zoning. The project is compatible with the residential and uses in vicinity.

B. Critical Areas Requirements LUC 20.25H:

The City of Bellevue Land Use Code Critical Areas Overlay District (LUC 20.25H) establishes performance standards and procedures that apply to development on any site which contains in whole or in part any portion designated as critical area, critical area buffer or structure setback from a critical area or buffer.

The staff report for the Sunset/Heathfield project addressed requirements for expansion of utility systems and facilities. This current proposal is to expand the mitigation provided by the project and is subject to the performance standards found in LUC 20.25H.055.C below.

i. Consistency with LUC 20.25H.055.C.2.a – Uses and Development Allowed Within Critical Areas

New or expanded facilities and systems are allowed within the critical area or critical area buffer only where no technically feasible alternative with less impact on the critical area or critical area buffer exists. A determination of technically feasible alternatives will consider:

1. **The location of existing infrastructure;**
2. **The function or objective of the proposed new or expanded facility or system;**
3. **Demonstration that no alternative location or configuration outside of the critical area or critical area buffer achieves the stated function or objective, including construction of new or expanded facilities or systems outside of the critical area;**
4. **Whether the cost of avoiding disturbance is substantially disproportionate as compared to the environmental impact of proposed disturbance; and**
5. **The ability of both permanent and temporary disturbance to be mitigated.**
   Finding: The proposed sewer must remain as constructed. The bridge over Vasa Creek must also remain to ensure continued road access. The proposal seeks to improve the stream channel and fish use and there is no alternative to the proposal that will achieve this improvement. The cost to remove the sewer and road infrastructure is far greater than the gain achieved by avoiding this stream improvement and the temporary impacts associated with this project.

ii. Consistency with LUC 20.25H.055.C.2.b - Uses and Development Allowed Within Critical Areas

If the applicant demonstrates that no technically feasible alternative with less impact on the critical area or critical area buffer exists, then the applicant shall comply with the following:

1. **Location and design shall result in the least impacts on the critical area or critical area buffer;**
2. **Disturbance of the critical area and critical area buffer, including disturbance of vegetation and soils, shall be minimized;**
3. **Disturbance shall not occur in habitat used for salmonid rearing or spawning or by any species of local importance unless no other technically feasible location exists;**
4. **Any crossing over of a wetland or stream shall be designed to minimize critical area and critical area buffer coverage and critical area and critical area buffer disturbance, for example by use of bridge, boring, or open cut and perpendicular crossings, and shall be the minimum width necessary to accommodate the intended function or objective; provided, that the Director may require that the facility be designed to accommodate additional facilities where the likelihood of additional facilities exists, and one consolidated corridor would result in fewer impacts to the critical area or critical area buffer than multiple intrusions into the critical area or critical area buffer;**

5. **All work shall be consistent with applicable City of Bellevue codes and standards;**
6. **The facility or system shall not have a significant adverse impact on overall aquatic area flow peaks, duration or volume or flood storage capacity, or hydroperiod;**
7. **Associated parking and other support functions, including, for example, mechanical equipment and maintenance sheds, must be located outside critical area or critical area buffer except where no feasible alternative exists; and**
8. **Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210.**
   Finding: All disturbance associated with this stream improvement is temporary and is minimized through use of a stream bypass and work occurring in the allowed work window. This project will improve the stream channel so that this segment of the stream is no longer a barrier to fish passage. The applicant has submitted documentation that based on hydrologic modeling that the proposal does not result in an increase of the Base Flood Elevation (BFE). All temporary disturbance is proposed to be restored with native vegetation.

iii. Consistency with LUC 20.25H.080

The proposal is consistent with the performance standards for project on sites with Type-F streams. There are no lights, noises, runoff, or treated water proposed and the stream banks are proposed to be restored with native vegetation.

iv. Consistency with LUC 20.25H.180

As discussed in the submitted stream study memo, there is no increase of the BFE resulting from this stream channel improvement. See reference document 4 for stream study and floodplain analysis. The biological evaluation regarding impacts to the floodplain was previously completed as part of the Sunset/Heathfield project review and is unchanged by this proposal.

IV. Public Notice and Comment

Application Date:	June 26, 2020
Public Notice (500 feet):	July 30, 2020
Minimum Comment Period:	August 13, 2020

The Notice of Application for this project was published in the City of Bellevue Weekly Permit Bulletin and Seattle Times on July 30, 2020. It was mailed to property owners within 500 feet of the project site. Comments were submitted by email by one party of record and a request to be a party of record was received from another property owner. King County responded to the comments submitted and this response is in the project file as reference document 5. Comments submitted concerned numerous topics from why this proposal is required,

economic benefits, benefits of this work compared to improvement elsewhere, timing of work, details of construction, and numerous other details of the project and plans. King County provided responses to all of the comments submitted and the city reviewed the comments and responses when reviewing the subject project's compliance with the applicable codes and standards.

V. Summary of Technical Reviews

A. Clearing and Grading

The Clearing and Grading Division of the Development Services Department reviewed the proposal for compliance with Clearing and Grading codes and standards and has approved the application.

B. Utilities

The Utilities Review section of Development Services Department reviewed the proposal for compliance with Utility codes and standards and has approved the application.

VI. State Environmental Policy Act (SEPA)

King County, as lead agency, issued a SEPA Determination of Non-significance for the Sunset/Heathfield project on September 17, 2015. King County has issued an addendum to this SEPA DNS for this proposed work per WAC 197-11-625. The SEPA checklist and addendum is reference document 6.

VII. Decision Criteria

A. 20.30P.140 Critical Area Land Use Permit Decision Criteria – Decision Criteria

The Director may approve, or approve with modifications an application for a Critical Area Land Use Permit if:

1. **The proposal obtains all other permits required by the Land Use Code.**

   Finding: All required construction permits will be obtained. **See Conditions of Approval in Section IX of this report.**

2. **The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical area and critical area buffer.**

   Finding: The proposal has only temporary impacts from construction and avoids impacts through stream bypass and working during the allowed work window.

3. **The proposal incorporates the performance standards of Part 20.25H to the maximum extent applicable.**

   Finding: The proposal incorporates the performance standards discussed in Section III above.

4. **The proposal will be served by adequate public facilities including street, fire protection, and utilities.**

   Finding: The proposal does not impacts public services and is associated with installation of public sewer.

5. **The proposal includes a mitigation or restoration plan consistent with the requirements of LUC Section 20.25H.210.**

   Finding: The proposal includes a restoration consistent with the requirements of LUC 20.25H.210. **See Conditions of Approval regarding restoration plans in Section IX of this report.**

6. **The proposal complies with other applicable requirements of this code.**

   Finding: As discussed in this report, the proposal complies with all other applicable requirements of the Land Use Code.

VIII. Conclusion and Decision

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, City Code and Standard compliance reviews, the Director of the Development Services Department does hereby **approve with conditions** the proposed stream channel improvement and planting.

Approval of this Critical Areas Land Use Permit does not constitute a permit for construction. Separate construction permits are required and all plans are subject to review for compliance with applicable City of Bellevue codes and standards.

Note- Expiration of Approval: In accordance with LUC 20.30P.150 a Critical Areas Land Use Permit automatically expires and is void if the applicant fails to file for a construction permit or other necessary development permits within one year of the effective date of the approval.

IX. Conditions of Approval

The applicant shall comply with all applicable Bellevue City Codes and Ordinances including but not limited to:

Applicable Ordinances	Contact Person
Clearing and Grading Code- BCC 23.76	Savina Uzunow, 425-452-5207
Utilities Code – BCC Title 24	Arturo Chi, 425-452-4119
Land Use Code- BCC Title 20	Reilly Pittman, 425-452-4350

The following conditions are imposed under the Bellevue City Code as referenced:

1. **Clearing and Grading Permit Required:** Approval of this Critical Areas Land Use Permit

does not constitute an approval of any construction permit. A clearing and grading permit must be approved before construction can begin. Plans submitted as part of any permit application shall be consistent with the activity permitted under this approval. A copy of the Hydraulic Project Approval granted by WDFW is required prior to issuance of the clearing and grading permit.

Authority: Land Use Code 20.30P.140
Clearing & Grading Code 23.76.035
Reviewer: Savina Uzunow, Development Services Department

2. **Fish Window and Rainy Season Restriction:** The work must be done within the Fish window and may not occur during the rainy season, which is defined as October 1st through April 30th.

   Authority: Clearing & Grading Code 23.76.093.A
   Reviewer: Savina Uzunow, Development Services Department

3. **Land Use Inspection:** Inspection planting and restoration of disturbance is required prior to final clearing and grading inspection.

   Authority: Land Use Code 20.25H.210
   Reviewer: Reilly Pittman, Development Services Department

4. **Restoration Planting:** Restoration of all disturbance and areas of invasive vegetation removal is required as shown on the approved plans

   Authority: Land Use Code 20.25H.210
   Reviewer: Reilly Pittman, Development Services Department

5. **Maintenance and Monitoring:** This stream channel improvement and planting is required to be incorporated into the 5-year maintenance and monitoring plan required for all mitigation associated with the Sunset/Heathfield project. An update to this approved plan is required to be submitted under the clearing and grading permit.

   Authority: Land Use Code 20.25H.210
   Reviewer: Reilly Pittman, Development Services Department

SUNSET AND HEATHFIELD PUMP STATIONS AND FORCE MAIN UPGRADE

CONTRACT NO 6153355

VASA CREEK HABITAT IMPROVEMENTS

FINAL PLANS

JUNE 2020

KING COUNTY
Department of
Natural Resources and Parks
Wastewater Treatment Division

GENERAL NOTES:

1. WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS AND PERMITS ISSUED FOR THE PROJECT. CONTRACTOR SHALL HAVE A COPY OF ALL PERMITS ONSITE AT ALL TIMES AND COMPLY WITH ALL CONDITIONS STIPULATED IN THE PERMITS.

2. CONTRACTOR SHALL HAVE COPIES OF THE APPROVED PLANS AND SPECIFICATIONS ON SITE AND READILY AVAILABLE AT ALL TIMES.

3. PRIOR TO ANY GROUND DISTURBANCE, CONTRACTOR SHALL LOCATE ALL UNDERGROUND AND OVERHEAD UTILITIES IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL UTILITIES AND ADJACENT INFRASTRUCTURE FROM DAMAGE DURING CONSTRUCTION.

4. PROJECT COORDINATE SYSTEM:
   HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD83) WASHINGTON STATE PLANE NORTH, US SURVEY FEET.

   VERTICAL DATUM: METRO (TO CONVERT FROM METRO TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), SUBTRACT 96.43 FT FROM METRO ELEVATION.)

5. FEATURES AND TOPOGRAPHY SURVEYED BY TRUE NORTH LAND SURVEYING, JULY 2014. STREAM CHANNEL TOPOGRAPHY IS LIKELY TO HAVE CHANGED SINCE THIS SURVEY WAS PERFORMED. AREA BENEATH THE BRIDGE IS NOT SURVEYED. ELEVATIONS ARE APPROXIMATE FROM ESA FIELD MEASUREMENTS APRIL 2019.

6. ACCESS TO THE SITE IS ON PUBLIC ROADS. CONTRACTOR SHALL COORDINATE WITH THE CITY OF BELLEVUE FOR APPROVED HAUL ROUTES AND TRAFFIC PERMITS AND APPROVALS.

7. 164TH PLACE SE SHALL REMAIN OPEN DURING CONSTRUCTION. SINGLE LANE CLOSURE ONLY.

8. CONTRACTOR SHALL CONFINE CONSTRUCTION OPERATION TO WITHIN THE PUBLIC RIGHT-OF-WAY ONLY UNLESS OTHERWISE SPECIFIED.

9. EROSION AND SEDIMENT CONTROL SHALL COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS. THE CONTRACTOR SHALL ADOPT THE PROVIDED TEMPORARY EROSION AND SEDIMENT CONTROL PLAN (TESC) OR PREPARE AN ALTERNATIVE.

10. THE CONTRACTOR IS RESPONSIBLE FOR ALL WATER MANAGEMENT THROUGHOUT CONSTRUCTION, INCLUDING DEWATERING AND DRAINAGE. THE CONTRACTOR SHALL PROVIDE CONTINUOUS STREAM DIVERSION AND DEWATERING IN ACCORDANCE WITH THE PLANS, SPECS, AND PERMIT CONDITIONS. THE CONTRACTOR SHALL INSTALL A TEMPORARY STREAM DIVERSION SYSTEM BEFORE COMMENCING WORK BELOW THE ORDINARY HIGH WATER MARK OF VASA CREEK.

11. ALL WORK BELOW THE ORDINARY HIGH WATER ELEVATION SHALL BE COMPLETED DURING THE IN-WATER WORK PERIOD SPECIFIED BY PERMIT CONDITIONS.

12. INVASIVE SPECIES MANAGEMENT: FOR PROJECT THAT INCLUDES WORK AROUND LAKES, STREAMS, STREAMBANKS, OR WETLANDS, THE FOLLOWING PROTOCOLS WILL APPLY:
    NEW ZEALAND MUDSNAILS (POTAMOPYRGUS ANTIPODARUM) HAVE BEEN DETECTED IN STREAMS WITHIN THE CITY OF BELLEVUE. TO PREVENT THE SPREAD OF THIS INVASIVE SPECIES IN ACCORDANCE WITH RCW 77.135 AND 77.15.811, ALL STREAM PROJECTS SHALL MEET THE FOLLOWING REQUIREMENTS:
    - CONTRACTORS SHALL ENSURE THAT ALL EQUIPMENT IS CLEAN AND DECONTAMINATED OF ANY POTENTIAL INVASIVE SPECIES PRIOR AND AFTER WORKING IN BELLEVUE STREAMS. EQUIPMENT WITH MUD OR DEBRIS SHALL NOT BE ALLOWED TO BE DEPLOYED.
    - WORKERS SHALL FOLLOW THE PROCEDURES IN THE WASHINGTON DEPARTMENT OF FISH AND WILDLIFE INVASIVE SPECIES MANAGEMENT PROTOCOLS. VERSION 2 - NOVEMBER 12 (OR THE LATEST VERSION OF THIS DOCUMENT).
    - ALL EQUIPMENT SHALL BE QUARANTINED IN AN AREA WHERE MUD, DEBRIS, OR WATER CANNOT BE TRACKED INTO OTHER STREAMS OR STORM DRAINAGE CATCH BASINS.
    - ALL EQUIPMENT SHALL BE BRUSHED OR SPRAYED ON-SITE SO NO INVASIVE SPECIES CAN BE DISLODGED DURING TRANSPORT PRIOR TO FULL DECONTAMINATION. THE ON-SITE CLEANING SHALL OCCUR IN A WAY THAT MUD, DEBRIS, OR WATER CANNOT BE TRACKED INTO OTHER STREAMS OR STORM DRAINAGE CATCH BASINS. ALL EQUIPMENT SHALL BE DECONTAMINATED AT A SITE THAT DRAINS TO WASTEWATER (SUCH AS A COMMERCIAL CAR WASH) PRIOR TO USE IN OTHER STREAM PROJECTS.

13. THIS PROJECT INCLUDES INSTALLATION OF CONSTRUCTED STREAMBED UNDERNEATH A LOW CLEARANCE BRIDGE (APPROX. 4.5 FEET OF CLEARANCE). EQUIPMENT ACCESS MAY BE CHALLENGING, AND HAND WORK MAY BE REQUIRED.

14. ALL EXCESS MATERIAL SHALL BE REMOVED FROM THE SITE UPON COMPLETION OF THE PROJECT AND TAKEN TO A PERMITTED FACILITY.

15. IF AREAS OR FEATURES OUTSIDE DESIGNATED CONSTRUCTION ZONES SUSTAIN IMPACT FROM CONTRACTOR ACTIVITIES, CONTRACTOR SHALL RESTORE TO PRE-CONSTRUCTION CONDITION.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR.

17. VASA CREEK RIPARIAN BUFFER IS 100 FEET. THE ENTIRE PROJECT AREA IS WITHIN THE RIPARIAN BUFFER.

811
KNOW WHAT'S BELOW.
CALL 2 BUSINESS DAYS
BEFORE YOU DIG.
(UTILITY LOCATIONS ARE APPROX.)

VICINITY MAP

LEGEND:

- DECIDUOUS TREE
- CONIFEROUS TREE
- WOODEN PILE
- STORM WATER MANHOLE
- CONTROL POINT
- G — GAS LINE
- GUARDRAIL
- W — WATER LINE
- FM — SEWER FORCE MAIN LINE
- OT — OVERHEAD TRANSMISSION LINE
- T — UNDERGROUND TRANSMISSION LINE
- OP — OVERHEAD POWER LINE
- P — UNDERGROUND POWER LINE
- EDGE OF PAVEMENT
- X — FENCE
- EDGE OF RIGHT-OF-WAY
- PROPERTY LINE
- OHW — ORDINARY HIGH WATER
- (E) TOP OF BANK
- (E) LOW FLOW CHANNEL TOP OF BANK
- (N) TOP OF BANK
- (N) TOE OF BANK
- (N) CHANNEL CENTER LINE
- DIVERSION PIPE
- (E) MAJOR CONTOUR
- (E) MINOR CONTOUR
- (N) MAJOR CONTOUR
- (N) MINOR CONTOUR
- STREAMBED SEDIMENT
- EXISTING PAVEMENT
- FISH EXCLUSION NETTING
- ACCESS ROUTE
- STAGING AREA/GEOTEXXTILE
- STRAW WATTLES
- HVSF — HIGH VISIBILITY SILT FENCING
- 100YR — 100 YEAR FLOODPLAIN
- CG — CLEARING AND GRUBBING LIMIT

SHEET LIST

UTILITIES NOTES:

1. BURIED, OVERHEAD, AND EXPOSED UTILITIES ARE PRESENT ON THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING OR RESTORING ALL UTILITIES.

2. UTILITY LOCATIONS AND DESCRIPTIONS SHOWN ON PLANS HAVE BEEN COMPILED FROM AVAILABLE RECORDS AND/OR FIELD SURVEY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF LOCATION AND DEPTH OF ALL EXISTING UTILITIES WITHIN THE CONSTRUCTION ZONE PRIOR TO BEGINNING CONSTRUCTION AND COORDINATION WITH UTILITY OWNERS TO PROTECT IN PLACE OR RESTORE UPON COMPLETION.

LEGAL DESCRIPTION:

THE PROJECT OCCURS ENTIRELY IN THE RIGHT-OF-WAY OF 164TH PLACE SE.

ABBREVIATIONS:

CG	CLEARING AND GRUBBING
CSWPPP	CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN
(E)	EXISTING
(N)	NEW
APPROX	APPROXIMATE
E	EAST / EASTING
EG	EXISTING GRADE
EL	ELEVATION
EX	EXISTING
FG	FINISH GRADE
FM	FORCE MAIN
FOD	FIBER OPTIC DUCT
FT	FOOT/FEET
G	GAS
GAL	GALLON
HVF	HIGH VISIBILITY FENCING
MIN	MINIMUM
N	NORTH / NORTHING
NTS	NOT TO SCALE
OC	ON CENTER
OHW	ORDINARY HIGH WATER
OP	OVERHEAD POWERLINE
OT	OVERHEAD TRANSMISSION LINE
P	POWER
PIP	PROTECT IN PLACE
ROW	RIGHT OF WAY
S	SEWER
SD	STORM DRAIN
SE	SOUTH EAST
SF	SQUARE FEET/SILT FENCE
STA	STATION
SS	SANITARY SEWER
T	TELECOMMUNICATION
TESC	TEMPORARY EROSION AND SEDIMENT CONTROL
TYP	TYPICAL
W	WATER
WDFW	WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

NO	REVISION DESCRIPTION	BY	APVD	DATE

ESA
5309 SHILSHOLE AVE. NW,
STE. 200
SEATTLE, WA 98107
OFFICE - 206.789.9658
WWW.ESASSOC.COM

ELEANOR S. BARTOLOMEO — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
6/16/2020

DESIGNED/DRAWN: A. FLOOR	SCALE: AS NOTED
PROJECT ENGINEER: E. BARTOLOMEO	REFERENCE 0 1"
DESIGN APPROVAL: J. SHEPPARD	FACILITY NUMBER: N/A
PROJECT ACCEPTANCE: A. GROTHE	CONTRACT NO: 6153355

King County

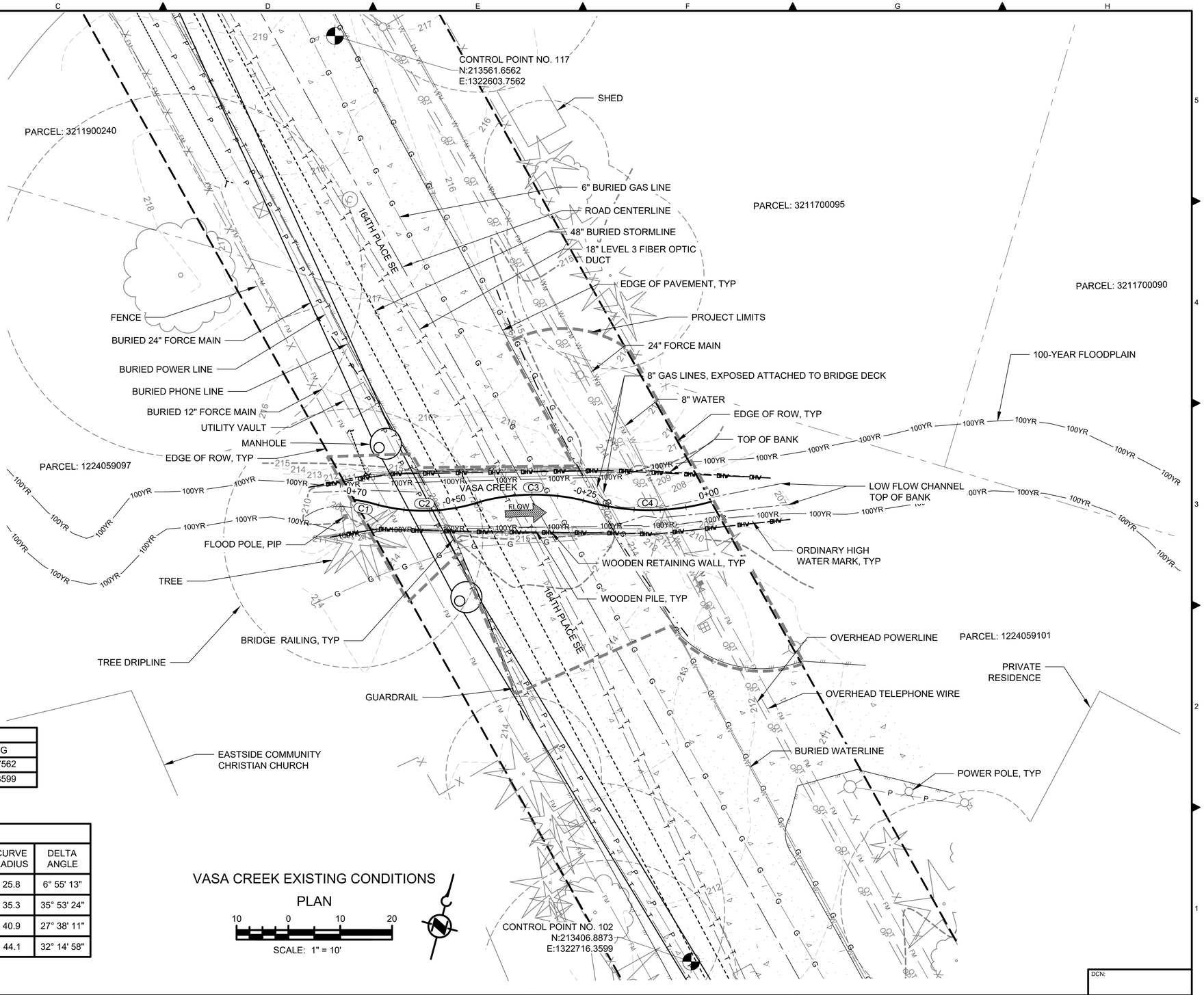
DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
SUNSET AND HEATHFIELD PUMP STATIONS
AND FORCE MAIN UPGRADE

NOTES & LEGEND

DCN:
DATE: JUNE 2020
PROJECT FILE NO: 1038122
DRAWING NO: G102
SHT NO / TOTAL: 2 / 8
REV NO: 0

NOTES:

1. FEATURES AND TOPOGRAPHY SURVEYED BY TRUE NORTH LAND SURVEYING, JULY 2014. STREAM CHANNEL TOPOGRAPHY IS LIKELY TO HAVE CHANGED SINCE THIS SURVEY WAS PERFORMED. AREA BENEATH THE BRIDGE IS NOT SURVEYED. ELEVATIONS ARE APPROXIMATE FROM ESA FIELD MEASUREMENTS APRIL 2019.
2. BRIDGE IS PILE SUPPORTED. PILE DEPTH IS UNKNOWN.
3. VASA CREEK RIPARIAN BUFFER IS 100 FEET AND IS OUTSIDE OF THE PLAN VIEW AREA. THE ENTIRE PROJECT AREA IS WITHIN THE RIPARIAN BUFFER.
4. SEE SHEET G102 FOR UTILITIES NOTES.



CONTROL POINT TABLE				
POINT NUMBER	ELEVATION	DESCRIPTION	NORTHING	EASTING
NO. 117	218.60	MAG NAIL W/WASHER	213561.6562	1322603.7562
NO. 102	211.44	MAG NAIL W/WASHER	213406.8873	1322716.3599

ALIGNMENT CONTROL TABLE									
SEGMENT	BEGIN STATION	END STATION	BEGIN EASTING	BEGIN NORTHING	LINE BEARING	LINE DISTANCE	CURVE DISTANCE	CURVE RADIUS	DELTA ANGLE
C1	-0+70	-0+67	1,322,630.5	213,476.1	---	---	3.1	25.8	6° 55' 13"
C2	-0+67	-0+45	1,322,633.6	213,476.4	---	---	22.1	35.3	35° 53' 24"
C3	-0+45	-0+25	1,322,654.5	213,482.4	---	---	19.7	40.9	27° 38' 11"
C4	-0+25	0+00	1,322,673.4	213,487.5	---	---	24.8	44.1	32° 14' 58"

VASA CREEK EXISTING CONDITIONS PLAN

10 0 10 20

SCALE: 1" = 10'

NO	REVISION DESCRIPTION	BY	APVD	DATE

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ELEANOR S. BARTOLOMEO — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
5/16/2020

DESIGNED/DRAWN: A. FLOOR	SCALE: AS NOTED
PROJECT ENGINEER: E.BARTOLOMEO	REFERENCE 0 1"
DESIGN APPROVAL: J. SHEPPARD	FACILITY NUMBER: N/A
PROJECT ACCEPTANCE: A. GROTHE	CONTRACT NO: 6153355

King County

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
SUNSET AND HEATHFIELD PUMP STATIONS AND FORCE MAIN UPGRADE

EXISTING CONDITIONS & SITE SURVEY CONTROL

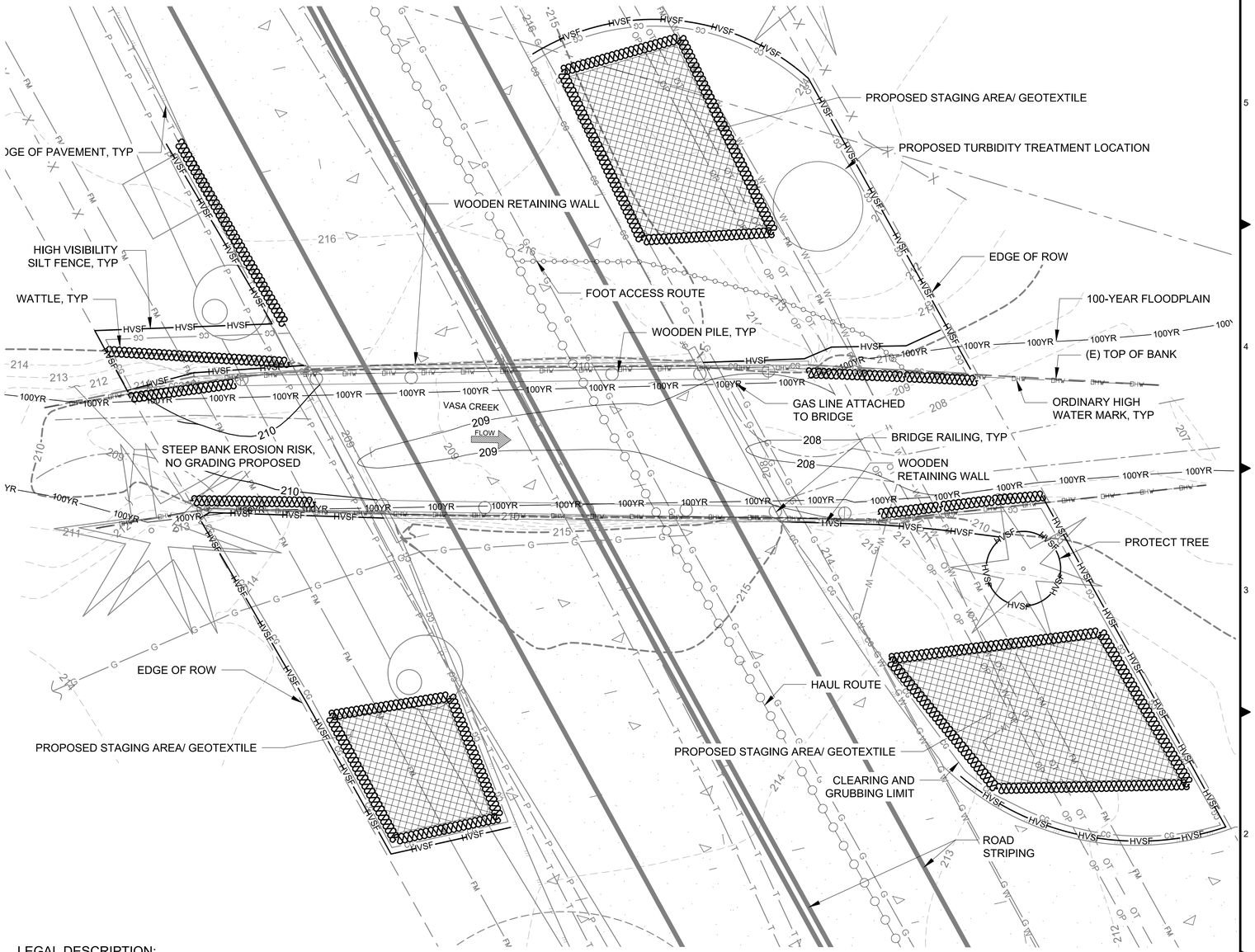
DCN:
DATE: JUNE 2020
PROJECT FILE NO: 1038122
DRAWING NO: G103
SHT NO 3 / TOTAL 8
REV NO: 0

CITY OF BELLEVUE STANDARD EROSION CONTROL NOTES:

1. CSWPPP AND TESC PLAN PREPARED BY ENVIRONMENTAL SCIENCE ASSOCIATES, SEATTLE. 206-789-9658
2. CSWPPP AND TESC PLAN TO BE IMPLEMENTED AND ALL BMPS MAINTAINED BY THE CONTRACTOR (CONTACT TBD).
3. ALL CLEARING & GRADING CONSTRUCTION MUST BE IN ACCORDANCE WITH CITY OF BELLEVUE (COB) CLEARING & GRADING CODE, CLEARING & GRADING DEVELOPMENT STANDARDS, LAND USE CODE, UNIFORM BUILDING CODE, PERMIT CONDITIONS, AND ALL OTHER APPLICABLE CODES, ORDINANCES, AND STANDARDS. THE DESIGN ELEMENTS WITHIN THESE PLANS HAVE BEEN REVIEWED ACCORDING TO THESE REQUIREMENTS. ANY VARIANCE FROM ADOPTED EROSION CONTROL STANDARDS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE CITY OF BELLEVUE DEVELOPMENT SERVICES (DSD) PRIOR TO CONSTRUCTION. IT SHALL BE THE SOLE RESPONSIBILITY OF THE APPLICANT AND THE PROFESSIONAL CIVIL ENGINEER TO CORRECT ANY ERROR, OMISSION, OR VARIATION FROM THE ABOVE REQUIREMENTS FOUND IN THESE PLANS. ALL CORRECTIONS SHALL BE AT NO ADDITIONAL COST OR LIABILITY TO THE COB.
4. APPROVAL OF THIS EROSION/SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
5. A COPY OF THE APPROVED PLANS AND DRAWINGS MUST BE ON-SITE DURING CONSTRUCTION. THE APPLICANT IS RESPONSIBLE FOR OBTAINING ANY OTHER REQUIRED OR RELATED PERMITS PRIOR TO BEGINNING CONSTRUCTION.
6. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
7. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
8. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
9. ALL LOCATIONS OF EXISTING UTILITIES HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD, THEREFORE, BE CONSIDERED ONLY APPROXIMATE AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS AND TO DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN.
10. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
11. CLEARING SHALL BE LIMITED TO THE AREAS WITHIN THE APPROVED DISTURBANCE LIMITS. EXPOSED SOILS MUST BE COVERED AT THE END OF EACH WORKING DAY WHEN WORKING FROM OCTOBER 1ST THROUGH APRIL 30TH. FROM MAY 1ST THROUGH SEPTEMBER 30TH, EXPOSED SOILS MUST BE COVERED AT THE END OF EACH CONSTRUCTION WEEK AND AT THE THREAT OF RAIN.
12. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM. (NOTE - NO KNOWN CATCH BASINS ARE PRESENT ON SITE.)
13. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT, IF REQUIRED.
14. THE CONTRACTOR MUST MAINTAIN A SWEEPER ON SITE DURING EARTHWORK AND IMMEDIATELY REMOVE SOIL THAT HAS BEEN TRACKED ONTO PAVED AREAS AS RESULT OF CONSTRUCTION.
15. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
16. ANY EXCAVATED MATERIAL REMOVED FROM THE CONSTRUCTION SITE AND DEPOSITED ON PROPERTY WITHIN THE CITY LIMITS MUST BE DONE IN COMPLIANCE WITH A VALID CLEARING & GRADING PERMIT. LOCATIONS FOR THE MOBILIZATION AREA AND STOCKPILED MATERIAL MUST BE APPROVED BY THE CLEARING AND GRADING INSPECTOR AT LEAST 24 HOURS IN ADVANCE OF ANY STOCKPILING.
17. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT.
18. FINAL SITE GRADING MUST DIRECT DRAINAGE AWAY FROM ALL BUILDING STRUCTURES AT A MINIMUM 5% SLOPE, PER THE INTERNATIONAL RESIDENTIAL CODE (IRC) R401.

PROJECT TESC NOTES:

1. INSTALL HIGH VISIBILITY SILT FENCE PER WSDOT STANDARD PLAN I-30.17-01 AND CITY OF BELLEVUE BMP C103 AND C233.
2. INSTALL WATTLES PER WSDOT STANDARD PLAN I-30.30-02 AND CITY OF BELLEVUE BMP C235.
3. PRESERVE AND PROTECT IN PLACE ALL TREES AND VEGETATION NOT DESIGNATED FOR REMOVAL PER CITY OF BELLEVUE BMP C101.
4. PROTECT TREES WITHIN THE LIMITS OF WORK PER CITY OF BELLEVUE BMP T101.
5. APPLY COMPOST AND MULCH TO DISTURBED AREAS OUTSIDE OF OHW PER CITY OF BELLEVUE BMPS C120 & C121. SEE SHEET L101.
6. ACCESS SHALL BE VIA 164TH PLACE SE. STREETS SHALL BE SWEPT AS NEEDED TO CONTROL DUST PER CITY OF BELLEVUE BMP C140.
7. VASA CREEK RIPARIAN BUFFER IS 100 FEET. THE BUFFER LIMIT IS OUTSIDE OF THE PLAN VIEW AREA. THE ENTIRE PROJECT AREA IS WITHIN THE BUFFER.
8. CONTRACTOR SHALL REMOVE ALL LOOSE DIRT FROM TRUCKS AND EQUIPMENT BEFORE IT LEAVES THE STAGING AREA. NO SEDIMENT TRACKING IS PERMITTED.



LEGAL DESCRIPTION:

THE PROJECT OCCURS ENTIRELY IN THE RIGHT-OF-WAY OF 164TH PLACE SE.

TEMPORARY EROSION CONTROL PLAN

5 0 5 10

SCALE: 1" = 5'

NO	REVISION DESCRIPTION	BY	APVD	DATE

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ELEANOR S. BARTOLOMEO, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER, 6/16/2020

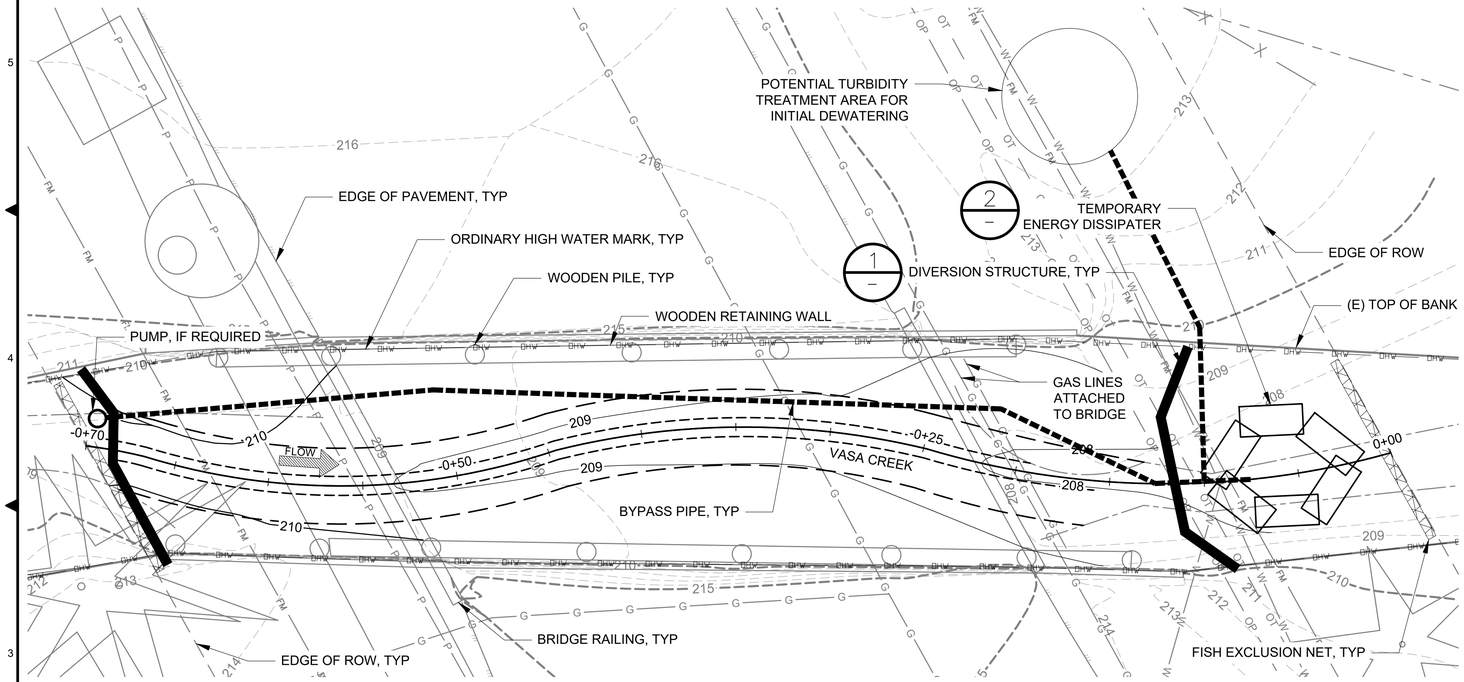
DESIGNED/DRAWN: E.BARTOLOMEO	SCALE: AS NOTED
PROJECT ENGINEER: E.BARTOLOMEO	REFERENCE 0 1"
DESIGN APPROVAL: J. SHEPPARD	FACILITY NUMBER: N/A
PROJECT ACCEPTANCE: A. GROTHE	CONTRACT NO: 6153355

King County

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
SUNSET AND HEATHFIELD PUMP STATIONS
AND FORCE MAIN UPGRADE

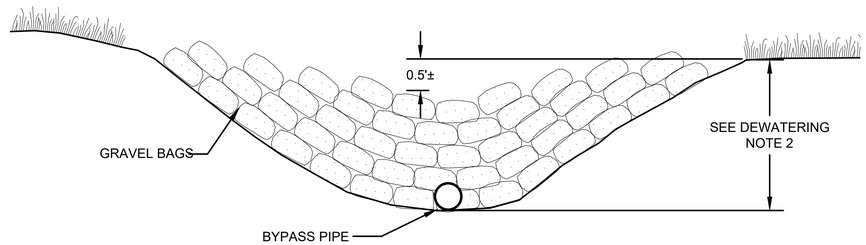
EROSION CONTROL PLAN

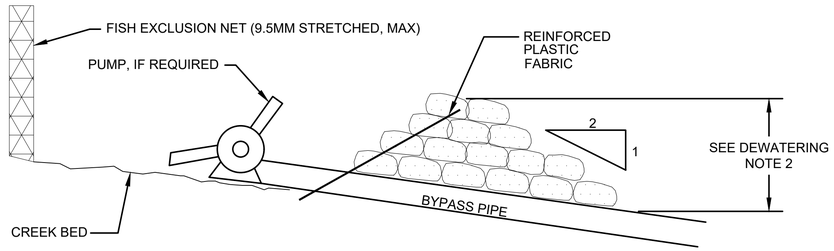
DCN:
DATE: JUNE 2020
PROJECT FILE NO: 1038122
DRAWING NO: G104
SHT NO / TOTAL: 4 / 8
REV NO: 0



DEWATERING PLAN

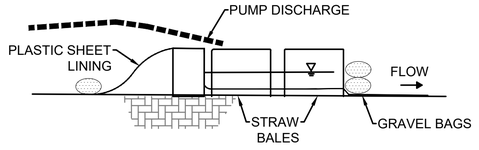
SCALE: 1" = 4'

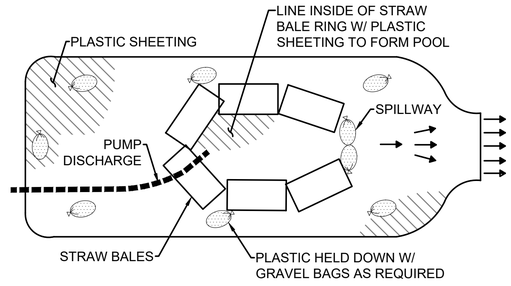




DIVERSION STRUCTURE

DETAIL 1 / SCALE: NTS





TEMPORARY ENERGY DISSIPATER

DETAIL 2 / SCALE: NTS

DEWATERING NOTES:

1. THE CONTRACTOR SHALL PREPARE AND SUBMIT A TEMPORARY STREAM DIVERSION PLAN FOR REVIEW BY THE PROJECT REPRESENTATIVE. THE CONTRACTOR SHALL NOT WORK WITHIN THE OHW OF VASA CREEK WITHOUT AN APPROVED TEMPORARY STREAM DIVERSION PLAN, PER SPECIFICATIONS.
2. THE DIVERSION STRUCTURES SHALL BE HIGH ENOUGH TO PREVENT OVERTOPPING AND ALLOW ENOUGH FREEBOARD FOR INCLEMENT WATER CONDITIONS. STRUCTURE HEIGHTS AND MATERIALS SHALL BE INCLUDED IN THE CONTRACTORS TEMPORARY STREAM DIVERSION PLAN. GRAVEL BAGS USED IN DIVERSION STRUCTURES SHALL BE FILLED WITH ROUNDED AGGREGATE INSTEAD OF SAND.
3. THE DIVERSION SYSTEM SHALL BE CAPABLE OF HANDLING THE EXPECTED FLOWS IN VASA CREEK DURING THE CONSTRUCTION PERIOD. FOR REFERENCE, THE 100-YEAR FLOW AT THE PROJECT SITE IS 15 CFS, AND THE 2-YEAR FLOW IS 5 CFS, PER THE CITY OF BELLEVUE FLOOD STUDY. THE CONTRACTOR SHALL ENSURE THAT THE DIVERSION SYSTEM SIZE CAN HANDLE THE 2-YEAR FLOWS AS A MINIMUM.
4. ALL DEWATERING PUMPS SHALL HAVE WDFW-APPROVED FISH SCREENS INSTALLED AND MAINTAINED PER RCW 77.57.010 AND RCW 77.57.070. ADDITIONALLY, FISH EXCLUSION NETTING SHALL BE INSTALLED UPSTREAM AND DOWNSTREAM OF THE ISOLATED WORK AREA. THE MINIMUM OPEN AREA FOR ALL TYPES OF FISH SCREENS IS 27%. THE SCREENED INTAKE FACILITY MUST HAVE ENOUGH SURFACE AREA TO ENSURE THAT THE VELOCITY THROUGH THE SCREEN IS LESS THAN 0.4 FEET PER SECOND.
5. FISH AND AQUATIC ORGANISM REMOVAL SHALL BE CONDUCTED PRIOR TO DEWATERING THE WORK AREA. FISH AND AQUATIC ORGANISMS WILL BE TEMPORARILY RELOCATED AS DIRECTED BY THE PROJECT REPRESENTATIVE.
6. ALL WORK WITHIN ORDINARY HIGH WATER OF VASA CREEK SHALL OCCUR DURING THE APPROVED IN-WATER WORK WINDOW PER PERMIT.
7. INVASIVE SPECIES MANAGEMENT: FOR PROJECT THAT INCLUDES WORK AROUND LAKES, STREAMS, STREAMBANKS, OR WETLANDS, THE FOLLOWING PROTOCOLS WILL APPLY:
   NEW ZEALAND MUDSNAILS (POTAMOPYRGUS ANTIPODARUM) HAVE BEEN DETECTED IN STREAMS WITHIN THE CITY OF BELLEVUE. TO PREVENT THE SPREAD OF THIS INVASIVE SPECIES IN ACCORDANCE WITH RCW 77.135 AND 77.15.811, ALL STREAM PROJECTS SHALL MEET THE FOLLOWING REQUIREMENTS:
   - CONTRACTORS SHALL ENSURE THAT ALL EQUIPMENT IS CLEAN AND DECONTAMINATED OF ANY POTENTIAL INVASIVE SPECIES PRIOR AND AFTER WORKING IN BELLEVUE STREAMS. EQUIPMENT WITH MUD OR DEBRIS SHALL NOT BE ALLOWED TO BE DEPLOYED.
   - WORKERS SHALL FOLLOW THE PROCEDURES IN THE WASHINGTON DEPARTMENT OF FISH AND WILDLIFE INVASIVE SPECIES MANAGEMENT PROTOCOLS. VERSION 2 - NOVEMBER 12 (OR THE LATEST VERSION OF THIS DOCUMENT).
   - ALL EQUIPMENT SHALL BE QUARANTINED IN AN AREA WHERE MUD, DEBRIS, OR WATER CANNOT BE TRACKED INTO OTHER STREAMS OR STORM DRAINAGE CATCH BASINS.
   - ALL EQUIPMENT SHALL BE BRUSHED OR SPRAYED ON-SITE SO NO INVASIVE SPECIES CAN BE DISLODGED DURING TRANSPORT PRIOR TO FULL DECONTAMINATION. THE ON-SITE CLEANING SHALL OCCUR IN A WAY THAT MUD, DEBRIS, OR WATER CANNOT BE TRACKED INTO OTHER STREAMS OR STORM DRAINAGE CATCH BASINS. ALL EQUIPMENT SHALL BE DECONTAMINATED AT A SITE THAT DRAINS TO WASTEWATER (SUCH AS A COMMERCIAL CAR WASH) PRIOR TO USE IN OTHER STREAM PROJECTS.
8. TURBIDITY LEVELS AT DISCHARGE MUST MEET ALL APPLICABLE PERMIT REQUIREMENTS. TURBIDITY TREATMENT SHALL BE CONTRACTOR DESIGNED AND DETAILED IN THE CONTRACTOR'S TEMPORARY STREAM DIVERSION PLAN. DEWATERING WATER MAY NOT BE DISCHARGED TO STORM OR SANITARY SEWERS SYSTEMS WITHOUT APPROPRIATE PERMITS. NO AREAS SUITABLE FOR INFILTRATION ARE PRESENT ON SITE.
9. THE CONTRACTOR SHALL INTRODUCE WATER TO THE NEW STREAM CHANNEL SECTION AND TRAP SEDIMENTS UNTIL THE STREAM SECTION IS FULLY REWATERED. REWATERING SHALL OCCUR AT A RATE TO AVOID LOSS OF SURFACE WATER DOWNSTREAM WHILE THE NEW CHANNEL IS REWATERED.

NO	REVISION DESCRIPTION	BY	APVD	DATE

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ELEANOR S. BARTOLOMEO — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — 6/16/2020

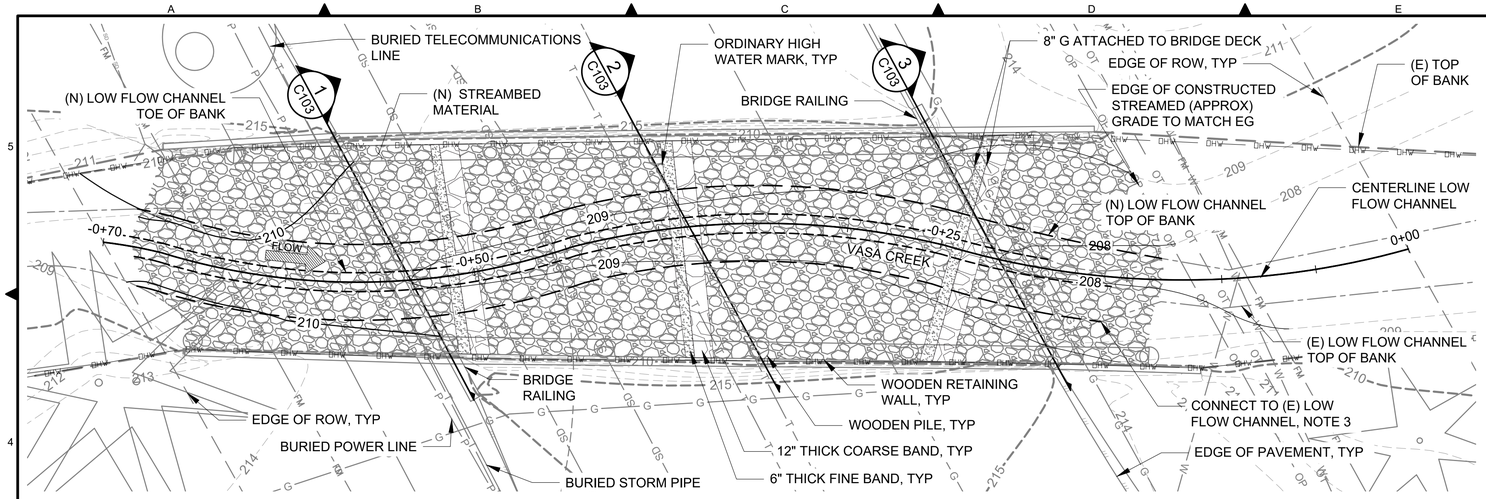
DESIGNED/DRAWN: E.BARTOLOMEO	SCALE: AS NOTED
PROJECT ENGINEER: E.BARTOLOMEO	REFERENCE 0 1"
DESIGN APPROVAL: J. SHEPPARD	FACILITY NUMBER: N/A
PROJECT ACCEPTANCE: A. GROTHE	CONTRACT NO: 6153355

King County

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
SUNSET AND HEATHFIELD PUMP STATIONS
AND FORCE MAIN UPGRADE

STREAM DEWATERING PLAN

DCN:
DATE: JUNE 2020
PROJECT FILE NO: 1038122
DRAWING NO: C101
SHT NO / TOTAL: 5 / 8
REV NO: 0

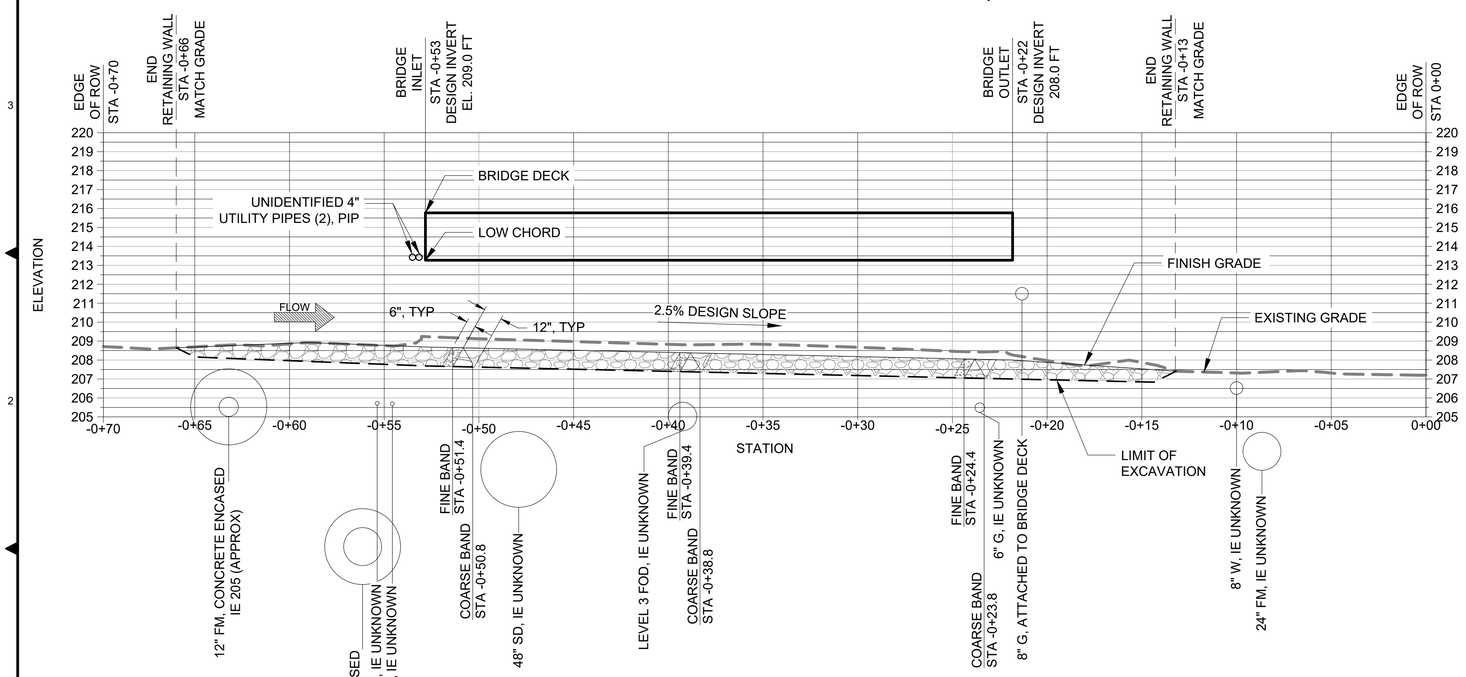


VASA CREEK

PLAN

4 0 4 8

SCALE: 1" = 4'



VASA CREEK

PROFILE 1 / -

SCALE: 1"=4'

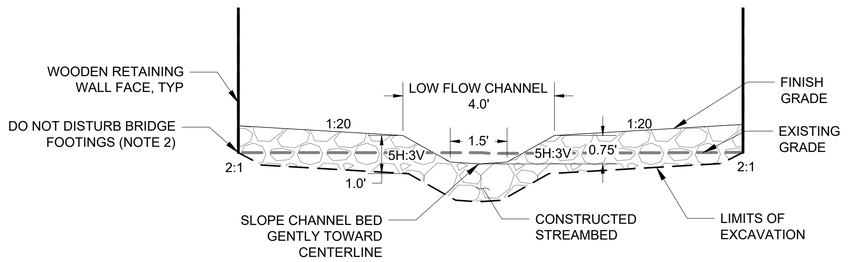
NOTES:

1. FEATURES AND TOPOGRAPHY SURVEYED BY TRUE NORTH LAND SURVEYING, JULY 2014. STREAM CHANNEL TOPOGRAPHY IS LIKELY TO HAVE CHANGED SINCE THIS SURVEY WAS PERFORMED. AREA BENEATH THE BRIDGE IS NOT SURVEYED. ELEVATIONS ARE APPROXIMATE FROM ESA FIELD MEASUREMENTS APRIL 2019.
2. SEE UTILITY NOTES, SHEET G102.
3. BRIDGE SUPPORTS CONSIST OF WOODEN PIERS IN FRONT OF WOODEN RETAINING WALLS. FOOTING TYPE AND AND DEPTH ARE UNKNOWN. SLOPE LIMITS OF EXCAVATION AWAY FROM BRIDGE ABUTMENTS AT 2:1 TO AVOID IMPACTS TO FOOTINGS. NOTIFY PROJECT REPRESENTATIVE IF FOOTINGS ARE ENCOUNTERED OR DAMAGED.
4. CONSTRUCT LOW FLOW CHANNEL BENEATH BRIDGE AS SHOWN. TRANSITION SMOOTHLY BETWEEN EXISTING AND DESIGN GRADES AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE PROJECT AS DIRECTED BY PROJECT REPRESENTATIVE IN THE FIELD. LIMITS OF GRADING AND CONSTRUCTED STREAMBED ARE APPROXIMATE. MATCH CENTER LINE, TOP, AND TOE OF LOW FLOW CHANNEL AND CHANNEL BANKS.
5. COARSE BANDS SHALL BE 12" THICK. FINE BANDS SHALL BE 6" THICK.
6. STOCKPILE NATIVE STREAMBED EXCAVATED FROM THE CHANNEL FOR REUSE.
7. MIX STREAMBED MATERIALS AND COARSE BAND MATERIALS PER THE TABLES BELOW. MATERIAL MAY BE MIXED IN PLACE. MIXES SHALL BE EVENLY MIXED AND UNSORTED.
8. PLACE STREAMBED MATERIALS AND COARSE BANDS IN 12-INCH LIFTS.
   - 8.1. PLACE AN ADDITIONAL LAYER OF NATIVE FINES ON TOP AND WASH THIS MATERIAL INTO THE VOIDS IN THE COBBLES. CONTINUE WASHING IN FINES UNTIL WATER NO LONGER INFILTRATES INTO THE ROCK MATRIX.
   - 8.2. THE PROJECT REPRESENTATIVE WILL VISUALLY INSPECT AND CONFIRM COMPLETION OF THIS STEP BEFORE PROCEEDING WITH SECOND LAYER OF MATERIAL.
   - 8.3. REPEAT THIS SEQUENCE OF MATERIAL PLACEMENT, POWER WASHING SEDIMENT INTO COBBLE MATRIX, AND INSPECTION UNTIL TARGET ELEVATIONS ARE ACHIEVED.

STREAMBED MATERIAL	
PERCENTAGE	GRADATION
30%	4" STREAMBED COBBLE
70%	NATIVE STREAMBED, SALVAGED ON SITE

COARSE BANDS	
PERCENTAGE	GRADATION
30%	4" STREAMBED COBBLE
40%	10" STREAMBED COBBLE
30%	NATIVE STREAMBED, SALVAGED ON SITE

FINE BANDS	
PERCENTAGE	GRADATION
100%	NATIVE STREAMBED, SALVAGED ON SITE



CONSTRUCTED STREAMBED

DETAIL 2 / -

SCALE: 1"=2'

NO	REVISION DESCRIPTION	BY	APVD	DATE

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5309 SHILSHOLE AVE. NW,
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ELEANOR S. BARTOLOMEO — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — 6/16/2020

DESIGNED/DRAWN: E.BARTOLOMEO	SCALE: AS NOTED
PROJECT ENGINEER: E.BARTOLOMEO	REFERENCE 0 1"
DESIGN APPROVAL: J. SHEPPARD	FACILITY NUMBER: N/A
PROJECT ACCEPTANCE: A. GROTHE	CONTRACT NO: 6153355

King County

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
SUNSET AND HEATHFIELD PUMP STATIONS
AND FORCE MAIN UPGRADE

CHANNEL IMPROVEMENT PLAN & DETAILS

DCN:

DATE: JUNE 2020

PROJECT FILE NO: 1038122

DRAWING NO: C102

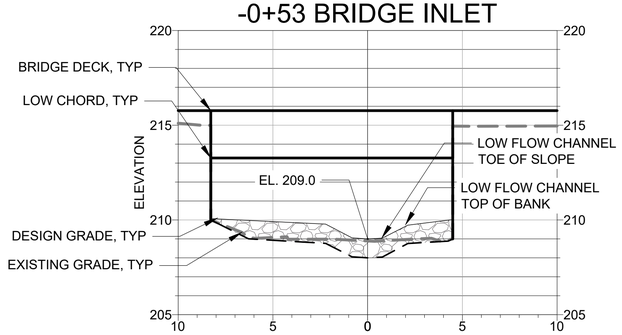
SHT NO 6 / TOTAL 8

REV NO: 0

NOTES:

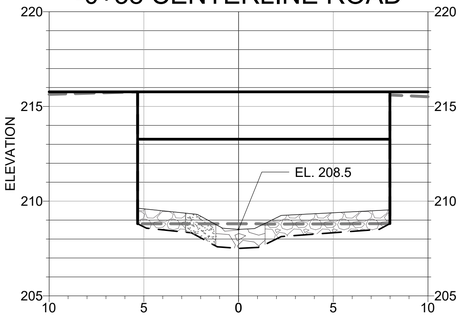
1. SECTIONS FACE DOWNSTREAM.
2. BRIDGE SUPPORTS CONSIST OF WOODEN PIERS IN FRONT OF WOODEN RETAINING WALLS. FOOTING TYPE AND AND DEPTH ARE UNKNOWN. SLOPE LIMITS OF EXCAVATION AWAY FROM BRIDGE ABUTMENTS AT 2:1 TO AVOID IMPACTS TO FOOTINGS. NOTIFY PROJECT REPRESENTATIVE IF FOOTINGS ARE ENCOUNTERED OR DAMAGED.
3. CONSTRUCT LOW FLOW CHANNEL BENEATH BRIDGE AS SHOWN. TRANSITION SMOOTHLY BETWEEN EXISTING AND DESIGN GRADES AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE PROJECT AS DIRECTED BY PROJECT REPRESENTATIVE IN THE FIELD. LIMITS OF GRADING AND CONSTRUCTED STREAMBED ARE APPROXIMATE. MATCH CENTER LINE, TOP, AND TOE OF LOW FLOW CHANNEL AND CHANNEL BANKS.

-0+53 BRIDGE INLET



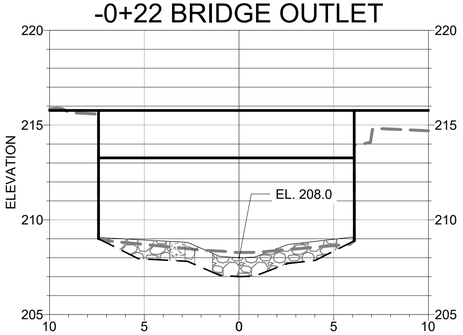
SECTION 1 (1/-)
SCALE: AS SHOWN

-0+38 CENTERLINE ROAD



SECTION 2 (2/-)
SCALE: AS SHOWN

-0+22 BRIDGE OUTLET



SECTION 3 (3/-)
SCALE: AS SHOWN

NO	REVISION DESCRIPTION	BY	APVD	DATE

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ELEANOR S. BARTOLOMEO, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER
5/16/2020

DESIGNED/DRAWN: M. NELSON	SCALE: AS NOTED
PROJECT ENGINEER: E.BARTOLOMEO	REFERENCE 0 1"
DESIGN APPROVAL: J. SHEPPARD	FACILITY NUMBER: N/A
PROJECT ACCEPTANCE: A. GROTHE	CONTRACT NO: 6153355

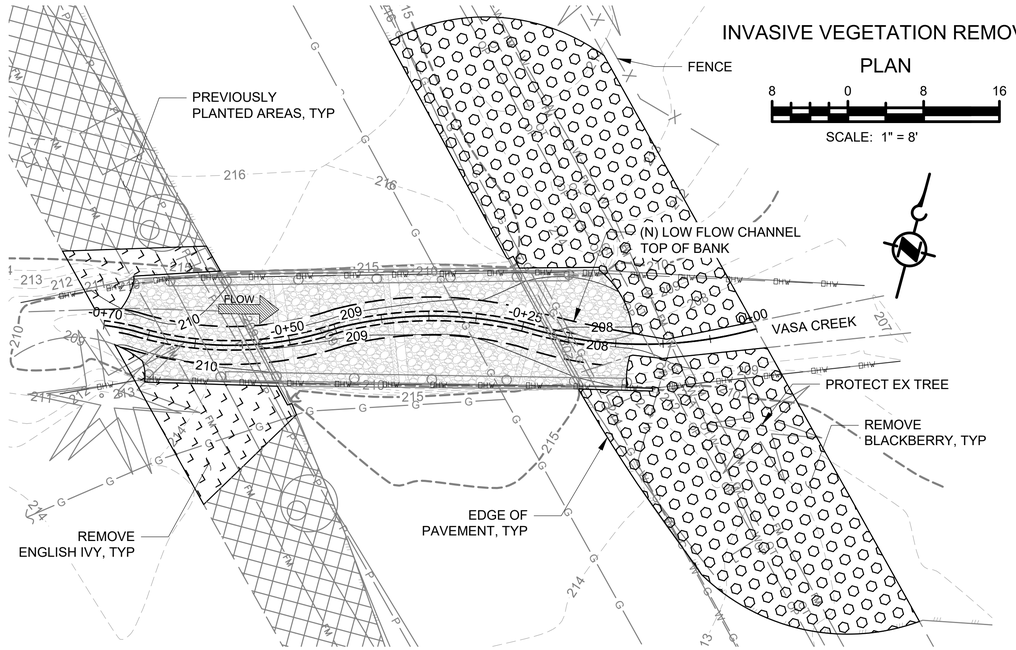
King County

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
SUNSET AND HEATHFIELD PUMP STATIONS
AND FORCE MAIN UPGRADE

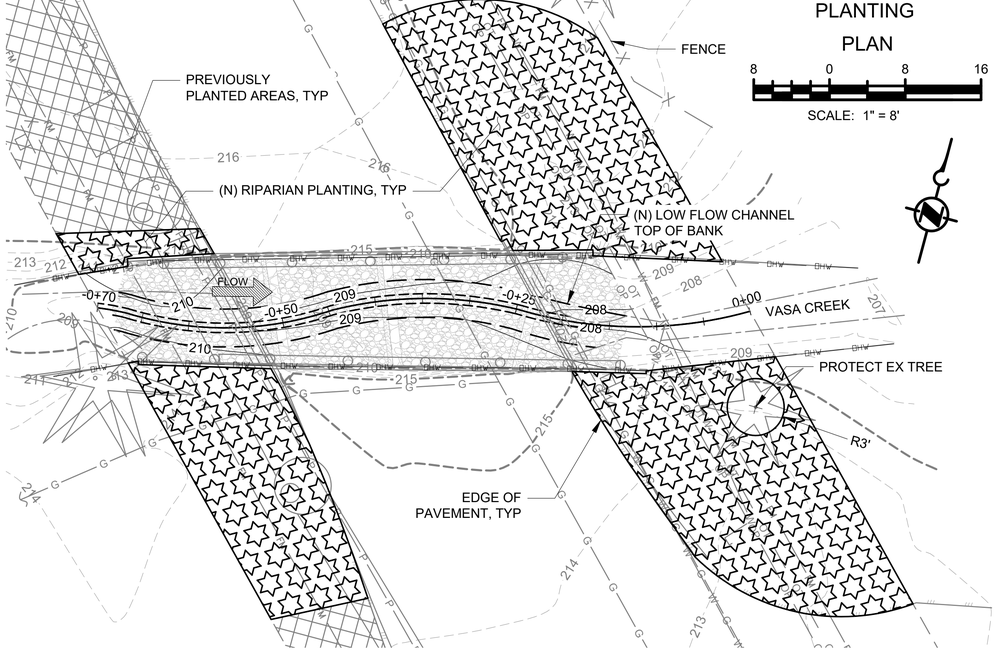
CHANNEL IMPROVEMENT SECTIONS

DCN:
DATE: JUNE 2020
PROJECT FILE NO: 1038122
DRAWING NO: C103
SHT NO 7 / TOTAL 8
REV NO: 0

INVASIVE VEGETATION REMOVAL PLAN



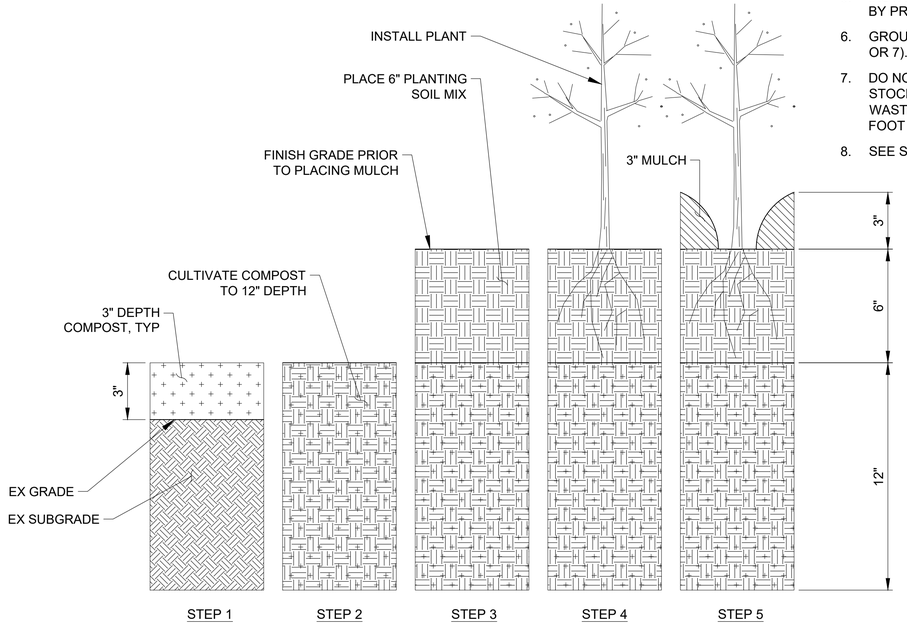
PLANTING PLAN



PLANTING SCHEDULE: RIPARIAN PLANTING AREA (1,476 SF)					
SYMBOL	SCIENTIFIC NAME	COMMON NAME	INSTALL SIZE	SPACING	QUANTITY
	MAHONIA AQUIFOLIUM	TALL OREGON GRAPE	1 GAL	6' OC	9
	MYRICA CALIFORNICA	PACIFIC WAX MYRTLE	1 GAL	6' OC	9
	POLYSTICHUM MUNITUM	SWORD FERN	1 GAL	6' OC	9
	ROSA NUTKANA	NOOTKA ROSE	1 GAL	6' OC	10
	SYMPHORICARPOS ALBUS	SNOWBERRY	1 GAL	6' OC	10

NOTES:

1. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS, AND SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH CONSTRUCTION.
2. PRESERVE AND PROTECT IN PLACE ALL TREES AND VEGETATION NOT DESIGNATED FOR REMOVAL.
3. REMOVE ALL INVASIVE SPECIES FROM THE PLANTING AREAS USING METHODS APPROVED BY THE STATE OF WASHINGTON NOXIOUS WEED CONTROL BOARD. SPECIFIC SPECIES TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO:
   A. HIMALAYAN BLACKBERRY (RUBUS ARMENIACUS)
   B. ENGLISH IVY (HEDERA HELIX)
4. LOCATIONS OF INVASIVE PLANTS ON THIS PLAN ARE APPROXIMATE.
5. INSTALL PLANT MATERIAL FOLLOWING APPROVAL OF INVASIVE REMOVAL BY PROJECT REPRESENTATIVE.
6. GROUP PLANTS OF SIMILAR SPECIES IN ODD NUMBER GROUPINGS (I.E. 3, 5, OR 7). INSTALL IN TRIANGULAR SPACING.
7. DO NOT DRIVE OR PARK ANY VEHICLES OR EQUIPMENT, STORE MATERIALS, STOCKPILE SOIL OR GRAVEL, OR DISPOSE OF ANY CONSTRUCTION OR WASTE MATERIAL WITHIN THE NEWLY INSTALLED PLANT AREAS. RESTRICT FOOT TRAFFIC WITHIN PROTECTED AREAS.
8. SEE SPECIFICATIONS FOR WATERING REQUIREMENTS.



SOIL PREPARATION

DETAIL 1 / -
SCALE: NTS

PLANTING AREA PREPARATION SEQUENCE:

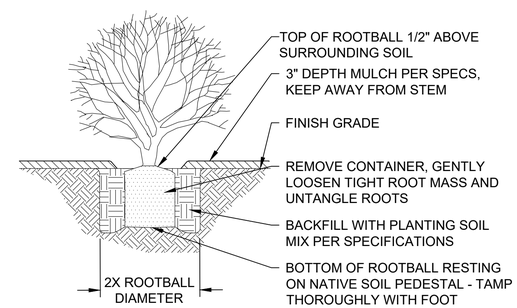
STEP 1
PLACE 3" COMPOST

STEP 2
INCORPORATE COMPOST TO 12" DEPTH

STEP 3
PLACE 6" PLANTING SOIL MIX PER SPECIFICATIONS

STEP 4
INSTALL PLANTS. SEE DETAIL 2 AND SPECIFICATIONS FOR METHOD AND PLANTING PLAN FOR LOCATIONS

STEP 5
INSTALL MULCH, 3" DEEP



SHRUB PLANTING

DETAIL 2 / -
SCALE: NTS

NO	REVISION DESCRIPTION	BY	APVD	DATE

ESA
5309 SHILSHOLE AVE. NW,
STE. 200
SEATTLE, WA 98107
OFFICE - 206.789.9658
WWW.ESASSOC.COM

STATE OF WASHINGTON · ALISONA B. GREENBERG · NO. 7047 EXP. 2/28/2021 · LANDSCAPE ARCHITECT
6/16/2020

DESIGNED/DRAWN: A. GREENBERG	SCALE: AS NOTED
PROJECT ENGINEER: E. BARTOLOMEO	REFERENCE 0 1"
DESIGN APPROVAL: J. SHEPPARD	FACILITY NUMBER: N/A
PROJECT ACCEPTANCE: A. GROTHE	CONTRACT NO: 6153355

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PLANTING PLAN

DCN:	
DATE:	JUNE 2020
PROJECT FILE NO:	1038122
DRAWING NO:	L101
SHT NO / TOTAL	8 / 8
REV NO:	0